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<110> University of Dundee, University of Dundee
<120> Polypeptides, Polynucleotides and Uses Thereof
<130> 350013-72
<140> 09/581,651
<141> 2000-10-10
<150> PCT/GB98/03766
<151> 1998-12-15
<160> 44
<170> PatentIn version 3.2
<210> 1
<211> 675
<212> PRT
<213> Homo sapiens
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Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
1 5 10 15

Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val
20 25 30

Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys
35 40 45

Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
50 55 60

Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65 70 75 80

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
85 90 95

Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
100 105 110

Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
115 120 125

Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
130 135 140

Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145 150 155 160

Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
165 170 175

Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
180 185 190

Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
195 200 205

Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
210 215 220

Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225 230 235 240

Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
245 250 255

Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn
260 265 270

Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
275 280 285

Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
290 295 300

Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
305 310 315 320

Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
325 330 335

Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
340 345 350

Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr

355

360

365

Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
370 375 380

Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
385 390 395 400

His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
405 410 415

Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
420 425 430

Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
435 440 445

Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
450 455 460

Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
465 470 475 480

Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr
485 490 495

Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met
500 505 510

Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala
515 520 525

Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn
530 535 540

Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn
545 550 555 560

Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val
565 570 575

Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp
580 585 590

Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr
595 600 605

Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro
610 615 620

Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln
625 630 635 640

Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile
645 650 655

Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn
660 665 670

Leu Gly Tyr
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cggtggctgt cagtcaaagc aagcccggtt gttatgacaa tggaaaacac tatcgataa 240
atcaacagtg ggagcggacc tacctaggca atgcgttggt ttgtacttgc tatggaggaa 300
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ctggaaacac ttaccgagtg ggtgacactt atgagcgtcc taaagactcc atgatctggg 420
actgtacctg catcgccccgt gggcgaggga gaataagctg taccatcgca aaccgctgcc 480
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gttacatgtt agagtgtgtg tgtcttggta atggaaaagg agaatggacc tgcaagccca 600
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gcatcacttg cacttctaga aatagatgca acgatcagga cacaaggaca tcctatagaa 780

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ctcctcccta	tggccactgt	gtcacagaca	gtgggtgtgg	ctactctgtg	gggatgcagt	1020
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gccaagagac	agctgttaacc	cagacttacg	gtggcaactc	aatggagag	ccatgtgtct	1140
taccattcac	ctacaacgac	aggacggaca	gcacaacttc	gaattatgag	caggaccaga	1200
aatactctt	ctgcacagac	cacactgttt	tggttcagac	tcgaggagga	aattccaatg	1260
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agggcagaag	agacaacatg	aagtgggtg	ggaccacaca	gaactatgat	gccgaccaga	1380
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tgtacccgcat	tggagatca	tggataagc	agcatgacat	gggtcacatg	atgaggtca	1500
cgtgtgttgg	gaatggtcgt	ggggaaatgga	catgcattgc	ctactcgcag	cttcgagatc	1560
agtgcattgt	tgtgacatc	acttacaatg	tgaacgacac	attccacaag	cgtcatgaag	1620
aggggcacat	gctgaactgt	acatgcttcg	gtcagggtcg	ggcagggtgg	aagtgtgatc	1680
ccgtcgacca	atgccaggat	tcaagactg	ggacgtttt	tcaaattgga	gattcatggg	1740
agaagtatgt	gcatgggtgc	agataccagt	gctactgcta	tggccgtggc	attggggagt	1800
ggcattgcca	acctttacag	acctatccaa	gctcaagtgg	tcctgtcgaa	gtatttatca	1860
ctgagactcc	gagtcagccc	aactcccacc	ccatccagtg	aatgcacca	cagccatctc	1920
acatttccaa	gtacattctc	aggtggagac	ctgtgagtt	cccacccaga	aaccttggat	1980
actgagtctc	ctaattttat	caattctgat	ggtttctttt	tttcccagct	ttttagccaa	2040
caactctgat	taactattcc	tatagcattt	actatatttg	tttagtgaac	aaacaatatg	2100
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 <213> Homo sapiens

<400> 3

Ile Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg
 1 5 10 15

Asn Leu Gly Tyr
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<210> 4
<211> 21
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<213> Homo sapiens

<400> 4

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys
1 5 10 15

Tyr Gly Gly Ser Arg
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<210> 5
<211> 23
<212> PRT
<213> Homo sapiens

<400> 5

Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr Thr
1 5 10 15

Ser Asn Tyr Glu Gln Asp Gln
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<210> 6
<211> 20
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<400> 6

Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly
1 5 10 15

Ala Leu Cys His
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<210> 7
<211> 21
<212> PRT
<213> Homo sapiens

<400> 7

Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr Ser Gln Leu
1 5 10 15

Arg Asp Gln Cys Ile
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<210> 8
<211> 21
<212> PRT
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Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
1 5 10 15

Tyr Gly Gly Ser Arg
20

<210> 9
<211> 39
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<213> Homo sapiens

<400> 9

Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly Arg Thr Phe Tyr Ser
1 5 10 15

Cys Thr Thr Glu Gly Arg Gln Asp Gly His Leu Trp Cys Ser Thr Thr
20 25 30

Ser Asn Tyr Glu Gln Asp Gln
35

<210> 10
<211> 21
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<213> Homo sapiens

<400> 10

Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn
1 5 10 15

Gly Ala Leu Cys His
20

<210> 11
<211> 21
<212> PRT
<213> Homo sapiens

<400> 11

Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Thr Ala Tyr Ser Gln Leu
1 5 10 15

Arg Asp Gln Cys Ile
20

<210> 12
<211> 20
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<213> Homo sapiens

<400> 12

Ile Ser Lys Thr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg
1 5 10 15

Trp Lys Glu Ala
20

<210> 13
<211> 18
<212> PRT
<213> Homo sapiens

<400> 13

Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
1 5 10 15

Leu Asn

<210> 14
<211> 31
<212> PRT
<213> Homo sapiens

<400> 14

Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val Gln Cys
1 5 10 15

Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg
20 25 30

<210> 15
<211> 20
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<213> Homo sapiens

<400> 15

Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln
1 5 10 15

Ser Lys Pro Gly
20

<210> 16
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<212> PRT
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<400> 16

Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln Trp Glu Arg
1 5 10 15

Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly Gly Ser Arg
20 25 30

Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
35 40 45

<210> 17
<211> 42
<212> PRT
<213> Homo sapiens

<400> 17

Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr Arg Ile Gly Asp Thr Trp
1 5 10 15

Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu Gln Cys Ile Cys Thr Gly
20 25 30

Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
35 40

<210> 18
<211> 35
<212> PRT
<213> Homo sapiens

<400> 18

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
1 5 10 15

Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
20 25 30

Tyr Gly His
35

<210> 19
<211> 37
<212> PRT
<213> Homo sapiens

<400> 19

Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met Gln Trp Leu
1 5 10 15

Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu Gly Asn Gly
20 25 30

Val Ser Cys Gln Glu
35

<210> 20
<211> 45
<212> PRT
<213> Homo sapiens

<400> 20

Thr Ala Val Thr Gln Thr Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys
1 5 10 15

Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr Thr Ser Asn
20 25 30

Tyr Glu Gln Asp Gln Lys Tyr Ser Phe Cys Thr Asp His
35 40 45

<210> 21
<211> 48
<212> PRT
<213> Homo sapiens

<400> 21

Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile Gly Asp Gln Trp Asp
1 5 10 15

Lys Gln His Asp Met Gly His Met Arg Cys Thr Cys Val Gly Asn
20 25 30

Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr Ser Gln Leu Arg Asp Gln
35 40 45

<210> 22
<211> 43
<212> PRT
<213> Homo sapiens

<400> 22

Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn Asp Thr Phe His Lys
1 5 10 15

Arg His Glu Glu Gly His Met Leu Asn Cys Thr Cys Phe Gly Gln Gly
20 25 30

Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln
35 40

<210> 23
<211> 48
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<213> Homo sapiens

<400> 23

Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp
1 5 10 15

Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg
20 25 30

Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser
35 40 45

<210> 24
<211> 39
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<213> Homo sapiens

<400> 24

Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn
1 5 10 15

Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys
20 25 30

Tyr Ile Leu Arg Trp Arg Pro
35

<210> 25
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<212> PRT
<213> Homo sapiens

<400> 25

Val Ser Ile Pro Pro Arg Asn Leu Gly Tyr
1 5 10

<210> 26
<211> 44
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<213> Homo sapiens

<400> 26

Trp Phe Leu Phe Phe Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr
1 5 10 15

Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val
20 25 30

Asn Ile Asp Leu Thr Glu Lys Lys Lys Lys Lys
35 40

<210> 27
<211> 6
<212> PRT
<213> Homo sapiens

<400> 27

Met Leu Arg Gly Pro Gly

1

5

<210> 28
<211> 65
<212> PRT
<213> Homo sapiens

<400> 28

Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly Ala Leu Cys
1 5 10 15

His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr Asp Cys Thr Ser
20 25 30

Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly Thr Thr Gln Asn Tyr
35 40 45

Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala Ala His Glu Glu
50 55 60

Ile
65

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<211> 2
<212> PRT
<213> Homo sapiens

<400> 29

Val Ser
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<210> 30
<211> 4
<212> PRT
<213> Homo sapiens

<400> 30

Ser Tyr Gln Phe
1

<210> 31
<211> 33
<212> PRT
<213> Homo sapiens

<400> 31

Trp Phe Leu Phe Phe Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr
1 5 10 15

Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val
20 25 30

Asn

<210> 32

<211> 3

<212> PRT

<213> Homo sapiens

<400> 32

Ile Asp Leu

1

<210> 33

<211> 8

<212> PRT

<213> Homo sapiens

<400> 33

Thr Glu Lys Lys Lys Lys Lys Lys
1 5

<210> 34

<211> 24

<212> PRT

<213> Homo sapiens

<400> 34

Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr
1 5 10 15

Thr Ser Asn Tyr Glu Gln Asp Gln
20

<210> 35

<211> 20

<212> PRT

<213> Homo sapiens

<400> 35

Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly
1 5 10 15

Ala Leu Cys His
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<210> 36
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<212> PRT
<213> Homo sapiens

<400> 36

Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val Leu Cys
1 5 10 15

Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg Gln
20 25 30

Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln Ser
35 40 45

Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
50 55 60

Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys Tyr Gly
65 70 75 80

Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
85 90 95

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
100 105 110

Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
115 120 125

Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
130 135 140

Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
145 150 155 160

Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu

165

170

175

Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
180 185 190

Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
195 200 205

Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
210 215 220

Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
225 230 235 240

Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu
245 250 255

Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
260 265 270

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
275 280 285

Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
290 295 300

Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met
305 310 315 320

Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu
325 330 335

Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly
340 345 350

Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly
355 360 365

Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly His Leu
370 375 380

Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser Phe
385 390 395 400

Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn
405 410 415

Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr
420 425 430

Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly Thr
435 440 445

Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala
450 455 460

Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile
465 470 475 480

Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg Cys
485 490 495

Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala Tyr Ser
500 505 510

Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn
515 520 525

Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys Thr
530 535 540

Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln
545 550 555 560

Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp
565 570 575

Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg
580 585 590

Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser
595 600 605

Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn
610 615 620

Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys
625 630 635 640

Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn Leu Gly
645 650 655

Tyr

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<220>
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<222> (717)..(717)
<223> Xaa can be any naturally occurring amino acid

<400> 37

Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
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Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val
20 25 30

Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys
35 40 45

Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
50 55 60

Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65 . 70 75 80

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
85 90 95

Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
100 105 110

Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
115 120 125

Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
130 135 140

Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145 150 155 160

Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
165 170 175

Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
180 185 190

Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
195 200 205

Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
210 215 220

Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225 230 235 240

Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
245 250 255

Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn
260 265 270

Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
275 280 285

Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe

290

295

300

Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
305 310 315 320

Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
325 330 335

Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
340 345 350

Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
355 360 365

Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
370 375 380

Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
385 390 395 400

His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
405 410 415

Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
420 425 430

Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
435 440 445

Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
450 455 460

Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
465 470 475 480

Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr
485 490 495

Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met
500 505 510

Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala
515 520 525

Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn
530 535 540

Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn
545 550 555 560

Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val
565 570 575

Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp
580 585 590

Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr
595 600 605

Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro
610 615 620

Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln
625 630 635 640

Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile
645 650 655

Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn
660 665 670

Leu Gly Tyr Xaa Val Ser Xaa Ser Gln Phe Xaa Trp Phe Leu Phe Phe
675 680 685

Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr Ser Tyr Ser Ile Tyr
690 695 700

Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val Asn Xaa Ile Asp
705 710 715

<210> 38
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<212> PRT
<213> Homo sapiens

<400> 38

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
1 5 10 15

Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
20 25 30

Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg
35 40

<210> 39
<211> 45
<212> PRT
<213> Homo sapiens

<400> 39

Cys His Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg
1 5 10 15

Pro His Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn
20 25 30

Gly Lys Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys
35 40 45

<210> 40
<211> 45
<212> PRT
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<400> 40

Cys Phe Asp His Ala Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp
1 5 10 15

Glu Lys Pro Tyr Gln Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly
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Glu Gly Ser Gly Arg Ile Thr Gly Thr Ser Arg Asn Arg
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<211> 21
<212> PRT
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<400> 42

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Arg Asp Gln Cys Ile
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<210> 43
<211> 20
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<213> Homo sapiens

<400> 43

Ile Ser Lys Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg
1 5 10 15

Trp Lys Glu Ala
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<210> 44
<211> 720
<212> PRT
<213> Homo sapiens

<400> 44

Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
1 5 10 15

Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val
20 25 30

Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys
35 40 45

Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
50 55 60

Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65 70 75 80

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
85 90 95

Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
100 105 110

Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
115 120 125

Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
130 135 140

Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145 150 155 160

Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
165 170 175

Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
180 185 190

Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
195 200 205

Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
210 215 220

Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225 230 235 240

Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
245 250 255

Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn
260 265 270

Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
275 280 285

Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
290 295 300

Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
305 310 315 320

Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
325 330 335

Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
340 345 350

Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
355 360 365

Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
370 375 380

Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
385 390 395 400

His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
405 410 415

Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
420 425 430

Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
435 440 445

Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
450 455 460

Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
465 470 475 480

Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr
485 490 495

Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met

500

505

510

Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala
515 520 525

Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn
530 535 540

Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn
545 550 555 560

Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val
565 570 575

Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp
580 585 590

Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr
595 600 605

Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro
610 615 620

Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln
625 630 635 640

Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile
645 650 655

Ser Lys Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg Trp
660 665 670

Lys Glu Ala Thr Ile Pro Gly His Leu Asn Ser Tyr Thr Ile Lys Gly
675 680 685

Leu Lys Pro Gly Val Val Tyr Glu Gly Gln Leu Ile Ser Ile Gln Gln
690 695 700

Tyr Gly His Gln Glu Val Thr Arg Phe Asp Phe Thr Thr Thr Ser Thr
705 710 715 720